



GUARDS AND HANDRAILS

GUARD REQUIREMENTS

Guards are required at the following locations per Section 1013 the 2007 California Building Code:

- Along open-sided walking surfaces, mezzanines, industrial equipment platforms, stairways, ramps and landings that are located more than 30 inches above the floor or grade below.
- Along glazed sides of stairways, ramps and landings located more than 30 inches above the floor or grade below where the glazing provided does not meet the strength and attachment requirements in Section 1607.7.
- At porches and decks enclosed with insect screening where the walking surface is located more than 30 inches above the floor or grade below.
- Where appliances, equipment, fans, roof hatch openings or other components that require service are located within 10 feet of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches above the floor, roof or grade below. (The guard shall be constructed so as to prevent the passage of a 21-inch sphere and the guard shall extend not less than 30 inches beyond each end of such appliance, equipment, fan or component.)
- Where the roof hatch opening for roof access is located within 10 feet of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches above the floor, roof or grade below. (The guard shall be constructed so as to prevent the passage of a 21-inch sphere.)

Exceptions:

1. On the loading side of loading docks or piers.
2. On the audience side of stages and raised platforms, including steps leading up to the stage and raised platforms.
3. On raised stage and platform floor areas, such as runways, ramps and side stages used for entertainment or presentations.
4. At vertical openings in the performance area of stages and platforms.
5. At elevated walking surfaces appurtenant to stages and platforms for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating where guards in accordance with Section 1025.14 are permitted and provided.

Guards shall form a protective barrier not less than 42 inches high except for stair railings in Group R-3 occupancies and within individual dwelling units in occupancies in Group R-2, guards whose top rail serves as a handrail shall have a height not less than 34 inches and not more than 38 inches measured vertically from the leading edge of the stair tread nosing.

Open guards shall have balusters or ornamental patterns such that a 4-inch-diameter sphere cannot pass through any opening except as allowed by Section 1013.3.

HANDRAIL REQUIREMENTS

Stairways shall have handrails on each side except stairways within dwelling units, spiral stairways and aisle stairs serving seating only on one side are permitted to have a handrail on one side only. In Group R-3 occupancies, a continuous run of treads or flight of stairs with fewer than four risers does not require handrails. Ramps with a rise greater than 6 inches shall have handrails on both sides.

Handrail-gripping surfaces shall be continuous, without interruption by newel posts or other obstructions except handrails within dwelling units are permitted to be interrupted by a newel post at a stair or ramp landing. Handrail brackets or balusters attached to the bottom surface of the handrail that do not project horizontally beyond the sides of the handrail within 1.5 inches of the bottom of the handrail shall not be considered obstructions.

Handrails shall return to a wall, guard or the walking surface or shall be continuous to the handrail of an adjacent stair flight or ramp run. At stairways where handrails are not continuous between flights, the handrails shall extend horizontally at least 12 inches beyond the top riser and continue to slope for the depth of one tread beyond the bottom riser. At ramps where handrails are not continuous between runs, the handrails shall extend horizontally above the landing 12 inches minimum beyond the top and bottom of ramp runs. Handrails within a dwelling unit that is not required to be accessible need extend only from the top riser to the bottom riser.

Clear space between a handrail and a wall or other surface shall be a minimum of 1.5 inches. A handrail and a wall or other surface adjacent to the handrail shall be free of any sharp or abrasive elements. The clear width between handrails shall be 36 inches minimum on ramps. Projections into the required width of stairways and ramps at each handrail shall not exceed 4.5 inches at or below the handrail heights.

GUARD AND HANDRAIL LOAD REQUIREMENTS

Handrail assemblies and guards shall be designed to resist a single concentrated load of 200 pounds and a load of 50 pounds per linear foot, applied in any direction at any point along the top. For one- and two-family dwellings, only the single concentrated load shall be applied. In Group I-3, F, H, and S occupancies, for areas that are not accessible to the general public and that have an occupant load less than 50, the minimum load shall be 20 pounds per linear foot in addition to the single concentrated load. Glass handrail assemblies and guards shall also comply with Section 2407.

Intermediate rails (all those except the handrail), balusters and panel filler shall be designed to withstand a horizontally applied normal load of 50 pounds on an area equal to 1 square foot, including openings and space between rails.

Where a guard is installed at a location where it is not required by the 2007 California Building Code, the policy of the Department of Planning and Land Use is that non-required guards shall be designed to meet the minimum load requirements, however, non-required guards are exempt from the 42 inch height requirements and opening limitations.

ACCEPTABLE HANDRAIL DESIGNS

NOTE:
Other shapes may be acceptable if they provide an equivalent gripping surface.

